

# P a t e n t   C l a i m s :

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1. An electrical device for generating a multi-rate PN  
5 sequence comprising:
    - sequence generation means adapted to output a plurality  
 of sequence values on the basis of a step control  
 signal ( $S_t$ ),  
 c h a r a c t e r i z e d   i n   t h a t   s a i d   d e v i c e   f u r t h e r  
10 comprises
      - selection means adapted to select one of said plurality  
 of sequence values on the basis of a select value ( $M_t$ ),  
 and
      - step control means adapted to provide said step control  
15 signal ( $S_t$ ).
  2. An electrical device according to claim 1,  
 c h a r a c t e r i z e d   i n   t h a t   s a i d   s e l e c t   v a l u e   ( $M_t$ )  
 is provided on the basis of a clock control value/signal  
20 ( $C_t$ ) and a previously generated select value ( $M_{t-1}$ ).
  3. An electrical device according to claim 1 or 2,  
 c h a r a c t e r i z e d   i n   t h a t   s a i d   s t e p   c o n t r o l  
 signal ( $S_t$ ) is provided on the basis of a clock control  
25 value/signal ( $C_t$ ) and a previously generated select value  
 ( $M_{t-1}$ ).
  4. An electrical device according to claim 1, 2 or 3,  
 c h a r a c t e r i z e d   i n   t h a t
    - 30 • said plurality of sequence values is two,
    - said select value ( $M_t$ ) is calculated as  $M_t = (C_t + M_{t-1})$   
 MOD 2, and
    - said step control signal ( $S_t$ ) is calculated as  $S_t = (C_t$   
 +  $M_{t-1})$  DIV 2.

- said plurality of sequence values is N, where N is at least 3,

10 6. An electrical device according to any one of the previous claims, characterized in that said sequence generation means is a windmill polynomial sequence generator.

- a plurality of delay elements (103),
- step control means (104) receiving a next block control

20      signal (202) as input, and

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30 9. A device according to claim 8, c h a r a c t e r -  
i z e d in that said portable device is a mobile  
telephone.

10. A device according to any one of the previous claims,  
35 c h a r a c t e r i z e d in that said electrical device  
is used in a stationary communication device.

11. A method of generating a multi-rate PN sequence comprising the step of:

- generating a plurality of sequence values on the basis  
5 of a step control signal ( $S_t$ ),  
c h a r a c t e r i z e d in that the method further  
comprises the steps of:
  - providing a select value ( $M_t$ ),
  - providing the step control signal ( $S_t$ ), and
  - 10 • selecting one of said plurality of sequence values on  
the basis of the select value ( $M_t$ ).

12. A method according to claim 11, c h a r a c t e r -  
i z e d in that said select value ( $M_t$ ) is provided on  
15 the basis of a clock control value/signal ( $C_t$ ) and a  
previously generated select value ( $M_{t-1}$ ).

13. A method according to claim 11 or 12, c h a r a c -  
t e r i z e d in that said step control signal ( $S_t$ ) is  
20 provided on the basis of a clock control value/signal  
( $C_t$ ) and a previously generated select value ( $M_{t-1}$ ).

14. A method according to claim 11, 12 or 13,  
c h a r a c t e r i z e d in that  
25 • said plurality of sequence values is two,  
• said select value ( $M_t$ ) is calculated as  $M_t = (C_t + M_{t-1})$   
MOD 2, and  
• said step control signal ( $S_t$ ) is calculated as  $S_t = (C_t$   
+  $M_{t-1}) \div 2$ .

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15. An method according to claim 11, 12 or 13,  
c h a r a c t e r i z e d in that  
• said plurality of sequence values is N, where N is at  
least 3,  
35 • said select value ( $M_t$ ) is calculated as  $M_t = (C_t + M_{t-1})$   
MOD N, and

16. A method according to any one of the previous claims,  
c h a r a c t e r i z e d in that said plurality of  
sequence values is generated by a windmill polynomial  
sequence generator.
17. A method according to any one of the previous claims,  
c h a r a c t e r i z e d in that said method is used in  
a portable device.
18. A method according to claim 17, c h a r a c t e r -  
i z e d in that said method is used in a mobile  
telephone.
19. A method according to any one of the previous claims,  
c h a r a c t e r i z e d in that said method is used in  
a stationary communication device.